c 5 / 6

CIA/RR GP 60-59:L
12 May 1960

GEOGRAPHIC ANALYSIS OF THE BEREZOVKA AREA

A. Introduction

The following report is an evaluation of the likelihood of flooding that might affect installations in the small valley* immediately northeast of Berezovka in Saratovskaya Oblast'. Other geographic information that might bear on the construction of sensitive installations in this area is also mentioned.

Analysis of available information indicates that installations constructed along the sides of the Berezovka Valley will not be affected by flooding. Floods related to seasonal fluctuations in stream flow are confined to the lower part of the valley floor, and the lowest elevation in the valley is above the highest projected level of the Stalingrad Reservoir.

B. Possible Seasonal Flooding

Some flooding can be expected in the Berezovka Valley, but it would be confined to the lower parts of the valley floor. Maximum stream flow that could cause flooding occurs in April as a result of the rapid thawing of the snow combined with spring rains. At other times the flow is slight or intermittent. Although hydrographic data are not available for the Berezovka River, these conclusions are

---

* On the prewar 1:100,000 Soviet topographic sheet of the area the name of the valley is given as Dolina Tal'. Since the word Tal' is of German origin, the valley was probably renamed during World War II, when the names of German settlements in this vicinity were changed. For convenience, the name Berezovka is arbitrarily used throughout this paper for both the stream and the valley.

supported by fairly accurate interpolations based on observations made at Krasnyy Kut on the Yeruslan River, 73 kilometers (45 miles) to the southeast.

Following the spring high-water period, the discharge of the Berezovka River probably decreases sharply to a very slight flow, for a month or two, when the river is fed by ground water. Ground water commonly occurs at depths of 10 to 20 meters (33 to 66 feet) below the surface of the surrounding plain, and ground-water seepage probably occurs near the base of the bluffs that border the river floodplain.

The rainfall pattern in the vicinity of the Berezovka Valley indicates that flash floods are rare. Moderate amounts of rainfall occur in every month of the year, with maximum monthly rainfall during the summer (see Table following p. 4). Heavy rainstorms are infrequent. Data for Oktyabr'skiy Gorodok ($51^\circ38'N-45^\circ27'E$) indicate that the absolute maximum precipitation for a 24-hour period during a 40-year period of record was 63 millimeters (2.5 inches). The Berezovka vicinity has an average of less than 8 days per year with rainfall amounts equal to or exceeding 10 millimeters (0.4 inches).

The type of vegetation found along the floor of the floodplain also indicates that the Berezovka Valley is flooded for only short periods; and, even then, flooding is unlikely on the higher parts of the floodplain. The stands of trees, possibly oak, that occupy the more elevated portions of the valley form a sharp contrast to the water-tolerant grasses and sedges that grow along the periodically

- 2 -

flooded banks of the Berezovka River and on the Volga River floodplain.
It is unlikely that trees would be present if the area were subject to
repeated and prolonged inundation.

C. Possible Flooding in Connection with Stalingrad Reservoir

The completion of the Stalingrad Dam will cause drastic changes in
the Volga River valley west of Berezovka. The dam is creating a huge
reservoir that will eventually extend from Stalingrad northward beyond
Saratov to Balakovo (see Map I). Although the Volga flood plain near
Berezovka will be inundated, the flooding will not extend into the
Berezovka Valley.

A rise of 26 meters (85 feet) in water level of the Volga may be
expected as a result of the dam at Stalingrad. Since the original
elevation of the water surface at the damsite was 10 or 11 meters
(33 to 36 feet) below sea level, the approximate elevation of the
surface of the reservoir when filled (in 1961) will be 15 meters
(49 feet) above sea level. The absolute maximum level to which water
is likely to rise during periods of severe flooding will probably not
exceed 20 meters (66 feet). Since the 20-meter contour crosses the
mouth of the Berezovka Valley, no water should back up beyond this
point (see Map II). The fact that some settlements in the vicinity
of the 20-meter contour have not been removed to higher ground also
supports the conclusion that flooding is not likely to affect the
Berezovka Valley.

D. Population in the Berezovka Area

Berezovka lies in a section of Saratovskaya Oblast' that was formerly part of the Volga-German ASSR of pre-World War II days. Old place names in the Berezovka area indicate that it was an area of German settlement before World War II. Since the relocation of the German inhabitants in 1941, much of the area probably has only a sparse population and is certainly free of population elements that, from the Soviet point of view, might represent a security hazard to sensitive installations.

E. Water Transport Capability

Although channel dredging and the building of dock facilities would be necessary, the Stalingrad Reservoir will make excellent water transportation available right to the mouth of the Berezovka River.

Average Precipitation

		Millimeters
	Station	
Month	Saratov (51°34'N-46°02'E)	Marks (51°42'N-46°44'E)
Jan	24	22
Feb	26	21
Mar	23	22
Apr	22	23
May	35	33
Jun	48	35
Jul	44	34
Aug	36	37
Sep	37	34
Oct	33	32
Nov	37	38
Dec	29	29
Year	394	360